MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME:

UNITAL® Lf	PTFE POWDER FILLED ACETAL (POM)
DELRIN® 100AF	PTFE FIBER FILLED ACETAL (POM)
DELRIN® DE-588	PTFE FIBER FILLED ACETAL (POM)

PRODUCT USE: Engineering/Industrial grade thermoplastic stock shapes for subsequent machining and fabrication.

MANUFACTURER:
Nytef Plastics, Ltd.
633 Dunksferry Rd.
Bensalem, PA 19020
Website: www.nytefplastics.com

PHONE NUMBERS:

PRODUCT INFORMATION: 215 638-0800 (Monday – Friday, 8:30 am – 5:00 pm)
800 646-9833 (Monday – Friday, 8.30 am – 5:00 pm)

TRANSPORT EMERGENCY: 800 424-9300 (CHEMTREC) (24 hrs)

2. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT NAME /CHEMICAL NAME	CAS NUMBER	WEIGHT %
Acetal Polymer (Polyoxymethylene)	25231-38-3	>75
Stabilizers		<4.0
Polytetrafluorethylene (PTFE)	9002-84-0	<25

SECTION 313 SUPPLIER NOTIFICATION:
This product is not known to contain toxic chemicals listed under Section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40CFR part 372.

3. HEALTH HAZARDS IDENTIFICATION

ACUTE OR IMMEDIATE EFFECTS/ROUTES OF EXPOSURE:

SKIN: Molten acetal may cause thermal burns.
EYES: Contact with powder or dust may cause mechanical irritation.
INHALATION: Shapes are not considered an inhalation hazard.
INGESTION: Not a probable route of exposure.

LONG TERM/DELAYED EFFECTS: None Known.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None Known.

CHRONIC EFFECTS: There are no known effects from exposure to UNITAL Lf, Delrin 100AF, or Delrin DE-588 polymer itself. Significant skin permeation and systemic toxicity after contact appears unlikely. There are inconclusive or unverified reports of human sensitization.

3. HEALTH HAZARDS IDENTIFICATION (continued)

Note: UNITAL Lf, Delrin AF100, and Delrin DE-588 stock shapes melt and become unusable for their intended purpose at temperature above 175 C (350 °F). If heated to temperatures over 230 C (446 °F), the polymer releases formaldehyde. If heated to temperatures over 300 C (572 °F) the polymer releases PTFE decomposition products. Both of Formaldehyde and PTFE decomposition products may cause skin, eye, and respiratory irritation and allergic reactions.

MEDICAL RESTRICTIONS:

There are no known human health effects aggravated by exposure to this product.

CHRONIC/CARCINOGENICITY:

Chronic inhalation studies in animals have shown that formaldehyde causes nasal cancer in rats. The international agency for research on cancer has classified formaldehyde as a carcinogen in group 2a, and the national toxicology program included formaldehyde in its annual report on carcinogens.

CARCINOGEN STATUS FOR FORMALDEHYDE

NTP: Not tested **OSHA:** Not regulated **IARC:** 2A **ACGIH:** A2

4. FIRST AID MEASURES

SKIN: If molten polymer contacts skin, cool rapidly with cold water. Do not attempt to peel polymer from skin. Obtain medical attention for thermal burns.

EYES: In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes. Consult a physician if symptoms persist.

INHALATION: If exposure to fumes from overheating, move to fresh air. Consult a physician if symptoms persist.

5. FIRE FIGTHING MEASURES

AUTOIGNITION TEMPERATURE: 322 C (612 °F). Method ASTM D1929

CONDITIONS OF FLAMMABILITY: Burns with and invisible flame.

HAZARDOUS PRODUCTS OF COMBUSTION:

Hazardous combustion products may include intense heat, dense black smoke, carbon monoxide, formaldehyde, hydrogen fluoride, and carbonyl fluoride.

EXTINGUISHING MEDIA: Water spray, foam, dry chemical, and/or CO_2.

SPECIAL FIRE FIGHTING INSTRUCTIONS / PRECAUTIONS:

Fire fighters and others exposed to products of combustion should wear full protective clothing including self – contained, breathing apparatus. Fire fighting equipment should be thoroughly decontaminated after use.

6. ACCIDENTAL RELEASE MEASURES

SPILL OR RELEASE: Clean up by vacuuming or sweeping to prevent falls.

7. HANDLING AND STORAGE

HANDLING: Open containers only in well-ventilated area.

STORAGE: Dry storage. Keep containers closed to prevent contamination.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

VENTILATION: Local exhaust at processing equipment to keep particulates below 15 mg/m^3, the OSHA limits for nuisance dusts. Grinding and machining of parts should be reviewed to assure that particulate levels are kept below recommended standards. Formaldehyde fumes may be released during fabrication.

PROTECTIVE EQUIPMENT:

SKIN: Protective gloves are required when handling hot polymer. long sleeve cotton shirt and long pants when handling molten polymer.

EYE: Safety glasses are recommended to prevent particulate from entering eyes while grinding or machining.

RESPIRATOR: None under normal processing, if ventilation is adequate. If formaldehyde concentration is above 1 ppm. (temperatures exceed 230 C/446 °F) a properly fitted NIOSH approved respirator is required.

EXPOSURE GUIDELINES: Grinding and machining of parts should be reviewed to assure that particulate levels are kept below recommended standards.

INGREDIENT	AGENCY	VALUE
PARTICULATES	PEL (OSHA)	15 mg/m^3 total dust 5 mg/m^3 respirable dust
FORMALDEHYDE	OSHA PEL	0.75 ppm/8 hrs.TWA; 2 ppm STEL
	ACGIH TLV	0.3 ppm ceiling; 2 ppm STEL

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Stock shape may be rods or plates of different sizes. Brown color.

ODOR: Slight Odor.

PERCENT VOLATILES: Negligible.

MELTING POINT: 175-183 C (347-361 °F)

SOLUBILITY IN WATER: Insoluble

SPECIFIC GRAVITY: 1.42 - 1.54

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable at normal temperatures and storage conditions.

CONDITIONS TO AVOID: Heating above 230 C (446 °F) forms formaldehyde and PTFE decomposition products.

MATERIALS TO AVOID: Strong acids and bases (decomposes forming formaldehyde) and strong oxidizing agents. At melt temperatures, acetal resins are incompatible with halogenated polymers such as PVC and PVDC and any elastomers containing halogenated polymers. Even small amounts of such contaminants can cause sudden and spontaneous formaldehyde gas formations. Workplace fume concentrations well above threshold levels and unsafe pressurization of processing equipment can result.

11. TOXICOLOGICAL INFORMATION

CHRONIC TOXICITY: UNITAL Lf, Delrin 100AF, and Delrin DE-588 extruded shapes are harmless.

MEDICAL CONDITIONS PRONE TO AGGRAVATION BY EXPOSURE:
No specific information is available which addresses medical conditions that are generally recognized as being aggravated by this product.

12. ECOLOGICAL INFORMATION

AQUATIC TOXICITY: Toxicity is expected to be low based on insolubility of polymer in water.

13. DISPOSAL CONSIDERATION

WASTE DISPOSAL: Preferred options for disposal are: recycling, incineration with energy recovery, and landfill. Treatment and disposal must be in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT HAZARD CLASS: Not regulated.
SHIPPING NAME: Not Available.

15. REGULATORY INFORMATION

TSCA INVENTORY STATUS:
In compliance with TSCA inventory requirements for commercial purposes.

SECTION 313 SUPPLIER NOTIFICATION (SARA TITLE III-TOXIC CHEMICALS LIST):
This product contains no known toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and 40 CFR372.

15. REGULATORY INFORMATION (continued)

STATE REGULATIONS:

STATE RIGHT TO KNOW LAWS:

No substances on the state hazardous list, for the states indicated below, are used in the manufacture of products on this MSDS, with the exceptions indicated. While we do not specifically analyze these products or the raw materials used in their manufacture for substances on various state hazardous substances lists, to the best of our knowledge the products on this MSDS contain no such substances except for those specifically listed below:

PENNSYLVANIA: Substances on the Pennsylvania hazardous substances list present at a concentration of 1% or more: None Known.
Substances on the Pennsylvania special hazardous substances list present at a concentration of 0.01% or more: None Known.

CALIFORNIA PROPOSITION 65:

Substances known to the state of California to cause cancer: Formaldehyde.
Substances known to the state of California to cause birth defects or other reproductive harm: None Known.

NEW JERSEY: Substances on the New Jersey workplace hazardous substance list present at a concentration of 1% or more (0.1% for substances identified as carcinogens, mutagens, or teratogens): None Known.

HMIS RATING

HEALTH	**0**
FLAMMABILITY	**1**
REACTIVITY	**0**
PPE	**A**

16. OTHER INFORMATION

PREPARED BY: Technical Team
Nytef Plastics, LTD.
633 Dunksferry Rd.
Bensalem, PA 19020

REVISION DATE: November 10, 2008 **Rev.** 3
SUPERCEDES REVISION DATED: April 3, 2003
REVISION SUMMARY: Nytef Plastics, Ltd. has moved its manufacturing facility to the address shown above.

END OF MSDS